

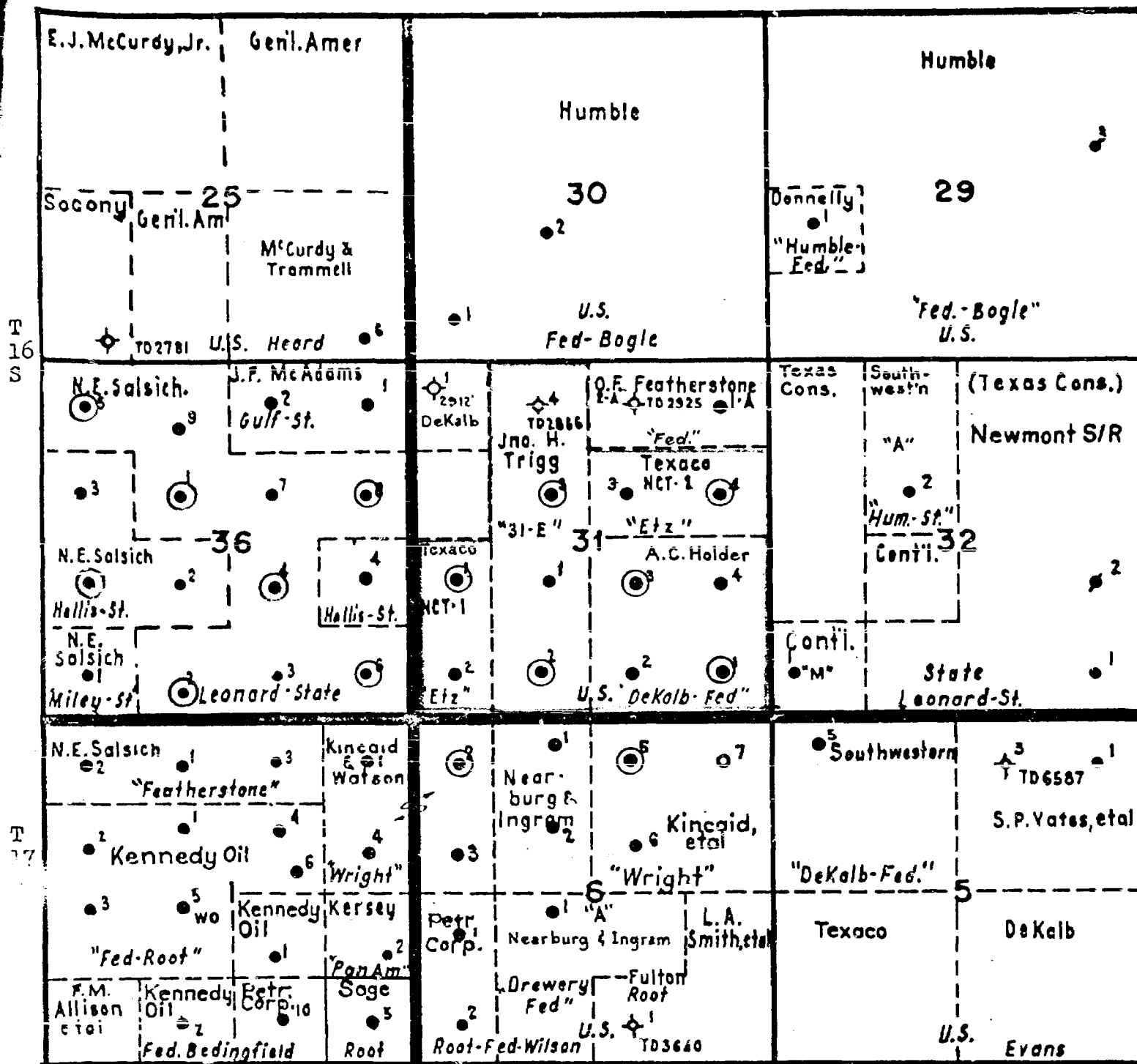
CASE 2940: Application of TEXACO
for a waterflood project, Square
Lake Pool, Eddy County, New Mexico.

CASE No.
2940

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

R-29-E

R-30-E



TEXACO INC.
SQUARE LAKE 31 UNIT
EDDY COUNTY, NEW MEXICO

— Unit Boundary
○ Injection Well
○ Proposed Injection Well

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Texaco EXHIBIT NO. 4
CASE NO. 2939-2940

INJECTION WELL COMPLETION DATA
 SQUARE LAKE 31 UNIT
 SQUARE LAKE (GRAYBURG-SAN ANDRES) POOL
 ELDY COUNTY, NEW MEXICO

See page 2 for well log

Operator & Lease	Well No.	Total Depth	Completion Interval	Surface Casing			Intermediate Casing			Production Casing		
				Size	Depth	Sacks Cement	Size	Depth	Sacks Cement	Size	Depth	Sacks Cement
A. C. Holder et al DeKalb Federal DeKalb Federal	1	2834'	2639-2809'	8-5/8"	572	50	7"	2098	-	5 1/2"	2834	50
	3	2793'	2603-2773'	8-5/8"	467	75				5 1/2"	2788	100
John H. Price Federal "B" Federal "B"	2-31	2761'	2728-2735'	10-3/4"	615	75				5 1/2"	2701	90
	3-31	2753'	2732-2753'	10-3/4"	579	325				5 1/2"	2722	90
Texaco Inc. Ezz Federal NCP-1 Ezz Federal NCP-2	1	2795'	2720-2746'	8-5/8"	475	500				4 1/2"	2795	300
	4	2850'	2788-2816'	8-5/8"	475	500				4 1/2"	2850	300

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 5
 CASE NO. 2935-2540

Handwritten notes:
 1. 2795' PB2765'
 2. 2850' PB2830'
 3. 2720-2746'
 4. 2788-2816'
 5. 8-5/8"
 6. 10-3/4"
 7. 500
 8. 500
 9. 300
 10. 300

-30-E

Humble

30

Donnerly 29

McCurdy 8
Trammell
25

T
16
S

42
11
42
42
462

Humble-Fed.
Humble

U.S.
Heard-Fed

U.S.
Federal-Bogle

U.S.
Fed-Bogle

J.F. McAdams
36

DeKalb
2912

J.H. Trigg
NM-04712

O.E. Featherstone
LC-068888

31 J.C. Thompson 32

Gulf-State
N.E. Salsich

Leonard-Federal

Federal
Texaco
NM-08529

Leonard-St.
N.E. Salsich

Texaco
NM-08529

"31-E"

A.N. Elz Federal
A.C. Holder, et al
NM-04393

Hollis-State
N.E. Salsich

NCT-1

Leonard-St.
Continental

Leonard-St.

A.N. Elz - Federal

U.S.

DeKalb - Federal

State

Kincaid & Watson

Kincaid & Watson

Nearburg & Ingram

Kincaid & Watson

6

Southwestern 5

T
17
S

Wright

Wright

Drewery-Fed

U.S.

U.S.
DeKalb-Fed.

EXHIBIT "A"

SQUARE LAKE 31 UNIT AREA

EDDY CO., NEW MEXICO

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSIONS SCALE: 1"=1000'

Texaco EXHIBIT NO. 1

CASE NO. 2939-2940

UNIT AREA
TRACT NO.
PROPOSED WATER INJECTION WELL

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 11/22/63

CASE 2940

Hearing Date 9am 11/20/63

My recommendations for an order in the above numbered cases are as follows:

Enter an order approving
Texaco's proposed water flood in
its Square Lake 31 Unit Area.
Authorize 5 injection wells:

Texaco Inc Etz Federal NCT-1 # 1, L-31

Texaco Inc Etz Federal NCT-2 # 4, H-31

John H. Trigg Federal E-31 # 2 N-31

John H. Trigg Federal E-31 # 3 F-31

A.C. Holden et al De Kalb Federal # 1, P-31

A.C. Holden et al De Kalb Federal # 3, J-31

all in Twp 16S, Rge 30E.

Injection will be into the premier
sand of the Graefburg formation,
Square Lake Pool, Eddy Co, N. Mex
Use standard WF order

Handwritten signature

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2940
Order No. R-2609

APPLICATION OF TEXACO INC.
FOR A WATERFLOOD PROJECT,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 20, 1963, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 6th day of December, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the Square Lake 31 Unit Agreement has been approved by the Commission by Order No. R-2608; that the Square Lake 31 Unit Area comprises 480 acres, more or less, of Federal land in Section 31, Township 16 South, Range 30 East, NMPM, Eddy County, New Mexico, as more fully described in said order.

(3) That the applicant, Texaco Inc., seeks permission to institute a waterflood project in the Square Lake Pool in the Square Lake 31 Unit Area by the injection of water into the Premier Sand of the Grayburg formation through six wells located within said unit area.

(4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) That the proposed waterflood project is in the interest of conservation and should result in recovery of otherwise unrecoverable oil, thereby preventing waste.

-2-
CASE No. 2940
Order No. R-2609

(6) That the subject application should be approved and the project should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to institute a waterflood project in the Square Lake Pool in the Square Lake 31 Unit Area by the injection of water into the Premier Sand of the Grayburg formation through the following-described six wells:

SECTION 31, TOWNSHIP 16 SOUTH, RANGE 30 EAST,
NMPM, EDDY COUNTY, NEW MEXICO

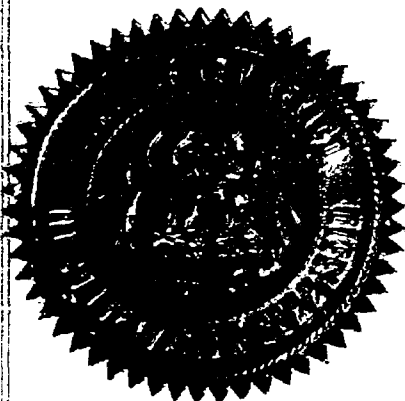
Texaco Inc. Etz Federal NCT-1 Well No. 1, Unit L
Texaco Inc. Etz Federal NCT-2 Well No. 4, Unit H
John H. Trigg Federal E-31 Well No. 2, Unit N
John H. Trigg Federal E-31 Well No. 3, Unit F
A. C. Holder et al DeKalb Federal Well No. 1, Unit P
A. C. Holder et al DeKalb Federal Well No. 3, Unit J

(2) That the subject waterflood project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including the allowable provisions thereof, and including the provisions with respect to expansion of the waterflood project.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

E. S. Walker
E. S. WALKER, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

esr/

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

December 6, 1963

C
O
P
Y

Mr. Charles White
Gilbert, White & Gilbert
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-2609, entered in Case No. 2340, approving the Texaco Square Lake 31 Waterflood Project.

According to our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 462 barrels per day.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

-2-

Mr. Charles White
Gilbert, White & Gilbert
Post Office Box 787
Santa Fe, New Mexico

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSH/lr

Enclosure

cc: Oil Conservation Commission
Artesia, New Mexico

C
O
P
Y

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



November 4, 1963

P. O. BOX 3109
MIDLAND, TEXAS

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Attn: Mr. A. L. Porter, Jr.

Gentlemen:

Texaco Inc. as the initial operator of the proposed Square Lake 31 Unit, Square Lake (Grayburg-San Andres) Pool, Eddy County, New Mexico, respectfully requests that a hearing be scheduled to consider its application for (1) approval of the Square Lake 31 Unit Agreement, (2) approval to initiate waterflooding activities in the Square Lake (Grayburg-San Andres) Pool, and (3) approval to convert six wells to injection to form a normal five-spot pattern for waterflood operations. In support of our application we wish to state the following facts:

1. The proposed Square Lake 31 Unit is a portion of the Square Lake (Grayburg-San Andres) Pool, Eddy County, New Mexico.
2. Currently there are eleven wells in the proposed unit area producing from this reservoir at an approximate depth of 2700'.
3. The area sought to be designated as the Square Lake 31 Unit comprises 480 acres, more or less, situated in Eddy County, New Mexico and which is more particularly described as follows:

Township 16 South, Range 30 East
New Mexico Principal Meridian

Sec. 31: S/2, S/2 NE/4, E/2 NW/4

4. The proposed pattern will be a normal five-spot and will consist of six injection wells.
5. The proposed wells to be converted to injection are as follows:

November 4, 1963

<u>Company</u>	<u>Lease and Well No.</u>	<u>Unit</u>	<u>S. T. R.</u>
A. C. Holder et al	DeKalb-Fed. No. 1	P	31-16-30
A. C. Holder et al	DeKalb-Fed. No. 3	J	31-16-30
Texaco Inc.	A. N. Etz-Fed. NCT-1 No. 1	L	31-16-30
Texaco Inc.	A. N. Etz-Fed. NCT-2 No. 4	H	31-16-30
J. H. Trigg	"31-E" No. 2	N	31-16-30
J. H. Trigg	"31-E" No. 3	F	31-16-30

Attached is a plat of the Square Lake 31 Unit with the boundary of the Unit shown by the hatched line. The proposed injection wells are shown circled in red. It is respectfully requested that the subject application be set on the first available hearing docket.

Yours very truly,

C. R. Black

C. R. Black
Division Proration Engineer

CRB-ME
Attach.

R-30-E

McCurdy B
Trammell
25

Humble

30 Donnelly 29

T
16
S

Humble-Fed.
Humble

6
U.S.
Heard-Fed.

U.S.
Federal-Bogle

U.S.
Fed-Bogle

J. F. Mc Adams
36

De Kalb
2912'

J. H. Trigg
NM-04712

O. F. Featherstone
LC-068888

31 J. C. Thompson 32

Gulf - State

N.E. Salsich

Leonard-Federal

Federal

Texaco
NM-08529

Leonard-St.

N.E. Salsich

Texaco
NM-08529

A. N. Elz - Federal

A. C. Holder, et al
NM-04393

Hollis - State

N.E. Salsich

NCT-1

Leonard-St.

Continental

Leonard-St.

A. N. Elz - Federal

U.S.

DeKalb - Federal

State

Kincaid & Watson

Kincaid & Watson

Nearburg & Ingram

Kincaid & Watson

6

Southwestern 5

T
17
S

Wright

Wright

Drewery-Fed.

U.S.

U.S.
DeKalb-Fed.

EXHIBIT "A"

SQUARE LAKE 31 UNIT AREA

EDDY CO., NEW MEXICO

SCALE: 1"=1000'

UNIT AREA
TRACT NO.
PROPOSED WATER INJECTION WELL

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2940

Order No. R- 2629

APPLICATION OF TEXACO INC.
FOR A WATERFLOOD PROJECT,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 20, 1963, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 20 day of November, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the Square Lake 31 Unit Agreement has been approved by the Commission by Order No. R-2608; that the Square Lake 31 Unit Area comprises 480 acres, more or less, of Federal land in Section 31, Township 16 South, Range 30 East, NMPM, Eddy County, New Mexico, as more fully described in said order.

(3) That the applicant, Texaco Inc., seeks permission to institute a waterflood project in the Square Lake Pool in the Square Lake 31 Unit Area by the injection of water into the Premier Sand

of the Grayburg formation
through six wells located within said unit area.

(4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

*I da -
Special Ltr of
Examination:
Texaco Square
Lake 31 Unit
Flood Project
may allow:
462 BOPD*

(5) That the proposed waterflood project is in the interest of conservation and should result in recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to institute a waterflood project in the Square Lake Pool in the Square Lake 31 Unit Area by the injection of water into the Premier Sand ^{of the Grayburg formation} through the following-described six wells:

SECTION 31, TOWNSHIP 16 SOUTH, RANGE 30 EAST,
NMPM, EDDY COUNTY, NEW MEXICO

Texaco Inc. Etz Federal NCT-1 Well No. 1, Unit L
Texaco Inc. Etz Federal NCT-2 Well No. 4, Unit H
John H. Trigg Federal E-31 Well No. 2, Unit N
John H. Trigg Federal E-31 Well No. 3, Unit F
A. C. Holder et al DeKalb Federal Well No. 1, Unit P
A. C. Holder et al DeKalb Federal Well No. 3, Unit J

(2) That the subject waterflood project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including the allowable provisions thereof, and including the provisions with respect to expansion of the waterflood project.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 20, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco, Inc. for a unit
agreement, Eddy County, New Mexico.

&
Application of Texaco, Inc., for a waterflood
project, Eddy County, New Mexico.

Case No. 2932 &
2940

BEFORE: DANIEL S. FUTTER, EXAMINER

TRANSCRIPT OF HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 20, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco, Inc. for a unit
agreement, Eddy County, New Mexico;

&

Application of Texaco, Inc. for a water-
flood project, Eddy County, New Mexico.

CASE NO. 2939 &
2940

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

MR. NUTTER: The hearing will come to order, please.

We will call first Case 2939 and Case 2940.

MR. DURRETT: Application of Texaco, Inc. for a unit
agreement, Eddy County, New Mexico, and application of Texaco, Inc.
for a waterflood project, Eddy County, New Mexico.

MR. WHITE: Charles White of Santa Fe, New Mexico,
appearing on behalf of the applicant. We have one witness to be
sworn.

(Witness sworn)

MR. WHITE: If the Examiner please, for the sake of the
hearing and saving of time, we would like to move that Cases 2939
and 2940 be consolidated for the purposes of the hearing.

DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

Suite 112C Simms Building Albuquerque, New Mexico Phone 243-6691



MR. NUTTER: Cases 39 and 40 will be consolidated for hearing purposes.

MR. WHITE: Thank you.

D. M. WILLIAMS,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Williams, will you state your name, full name, for the record?

A Don M. Williams.

Q And by whom and in what capacity are you employed?

A Employed by Texaco, Inc., District Petroleum Engineer in Hobbs, New Mexico.

Q Are you familiar with the applications in Cases 2939 and 2940?

A Yes, sir, I am.

Q Will you briefly state what Texaco is seeking by the applications?

A As initial unit operator, Texaco seeks approval of the Square Lake 31 Unit Agreement, seeks approval to initiate another flood activity in the proposed unit; third, approval to convert six wells to water injection.

Q Will you refer to what has been marked Exhibit One, and

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DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

explain the exhibit, please?

A Exhibit One is a plat which shows the proposed unit area, and the immediate area surrounding the unit. The unit is outlined by a hash line and contains some 480 acres more or less, consisting of the Southeast Quarter, the South Half of the Northeast Quarter, the Southwest Quarter and the East Half of the Northwest Quarter of Section 31, Township 16 South, Range 30 East, Eddy County, New Mexico.

Q All right.

A The plat also shows the names of the current operators of tracts within the unit, and it shows offset leases and operators.

Q Does the plat show the producing wells within the unit, the proposed injection wells?

A Yes, sir, it does. It shows 11 producing wells, which are completed, an average depth of approximately 3700. The six wells which are proposed for conversion to water injection are indicated on the plat by diagonal arrows and are further indicated by red circles around the wells.

Q Is the unit a portion of Square Lake Grayburg-San Andres Pool?

A Yes, it is.

Q Would the proposed pattern be the normal five-spot, and if so, would you give the location of the injection wells?

A Yes, sir. Conversion of the six indicated wells to water injection will provide five-spot injection pattern. Locations of



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these proposed injection wells are as follows: One in the Southeast of the Southeast; one in the Northwest of the Southeast; third in the Southeast of the Northeast; fourth in the Southeast of the Southwest; another in the Northwest of the Southwest; and the 6th well in the Southeast of the Northwest Quarter, all in Section 31.

Q Now, will you refer to Exhibit Number Two. Exhibit Number Two is what?

A Exhibit Number Two is a copy of the unit agreement, or the development and operation of the Square Lake 31 Unit area.

Q Is this a standard unit agreement?

A Yes, sir, it is.

Q Usual API form?

A Yes, sir.

Q Has the USGS tentatively approved the unit agreement?

A Yes. USGS Roswell office has indicated tentative approval of the unit agreement, and at the present time, the unit agreement is in the USGS office in Washington DC for approval.

Q Does the unit agreement embrace all Federal lands?

A Yes. All of the area within the proposed unit boundary is Federal land and the owner of the basic royalty on all tracts is the United States.

Q What percent of overriding royalty interest owners have signed up?

A All of the overriding royalty interest and all of the working interests have signed the agreement.



Q Then, you will have one hundred percent participation?

A Yes, sir. With the signature of the USGS, we will have 100 percent participation.

Q Now, will you refer to what has been marked Exhibit Three, and give the history of the production?

A Exhibit Three is a graph showing production performance curves for the area, comprising the Square Lake 31 Unit.

Specifically shown on this graph are curves showing number of wells, monthly oil production, monthly water production, gas-oil ratio, and accumulative oil production. All of these curves covering by months the time interval from May, 1958, which was the month in which first production was obtained in the unit area, through August of 1963.

Q Does this exhibit show these wells are producing in the stripper stage?

A Yes. The curves show that peak oil production was obtained in April, 1959, when production from the 11 wells in the unit area was approximately 11,400 barrels of oil per month, and that production has declined to monthly production of approximately 500 barrels of oil per month. From all of the wells in the unit area, that is. Currently, then, this is an average of less than two barrels of oil per well per day.

Q Will you now refer to and explain Exhibit Four?

A Exhibit Four is a plat showing the unit area outlined in yellow, the proposed injection wells circled in red, and all wells

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Suite 1120 Simms Building



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in the unit area and within one mile in each direction from the unit area.

Q Does it also show the water injection wells in the Square Lake Salsich Waterflood?

A Yes, sir. This plat shows circled in green existing water injection wells in Section 36, adjacent to the unit area to the west. These are existing in the Square Lake Salsich Waterflood.

Q This proposed waterflood project is being conducted with the cooperation of the operators of the Salsich Waterflood?

A Yes, sir. Preliminary arrangements have been made and agreement obtained to cooperatively waterflood along the common line between the proposed Square Lake 31 Unit and the Salsich property to the west. It is planned to accomplish this cooperative injection by conversion of wells circled in red in Section 36. The injection pattern will mesh and will be continuous on the cooperating tracts.

Q What comments do you care to make in regard to the wells circled in red to the South of the unit?

A Operators of the properties offsetting the proposed Square Lake 31 Unit to the South are currently completing negotiations to develop a unitized or a cooperative waterflood program on their lease, which will enable cooperative injection with the pattern shown by wells circled in red.

Q Do you have any completion data on your injection wells?

A Yes, sir. These data are shown on Exhibit Five.



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Q Will you explain Exhibit Five, please?

A Exhibit Five is a tabulation of data on the following proposed injection wells identified by current operator and lease. A. C. Holder, et al Decal Federal Number One; A. C. Holder, et al Decal Federal Number Three; John H. Trigg Federal Well Number Two-31; John H. Trigg Federal Well Number Three-31; Texaco, Inc. et al Federal Well Number One, and Texaco, Inc. et al Federal NCT2 Well Number Four. For each of these wells, is shown total depth, completion interval, size and depth set for all casing strings and number of sack of cement used on all casing strings.

Q How do you intend to inject the water?

A Injection will be down tubing; each injection well will be equipped for water injection by installing 2 3/8ths OD tubing and a packer with the packer to be set immediately above the top of the casing perforation. The tubing casing annulus in each injection well will be filled with fluid containing a corrosion inhibitor. Also, the inside of the injection tubing will be plastic coated to prevent corrosion.

Q In your opinion, will there be any communication with any other zones or formations?

A In my opinion, the injection wells will be so equipped as to eliminate communication of injection- - of injected water to any other zones.

Q What will be your source of supply for water?

A It is planned to obtain water for injection by purchasing



water from Caprock Water Company, a commercial water company.

Q Will that be fresh water?

A This water is brackish water produced from shallow wells.

Q What is your planned rate of injection?

A It is planned to initially inject 300 barrels of water per day per injection well, or a total of 1800 barrels of water per day for the six total injection wells in the unit area. Initial injection pressures are not expected to exceed 1000 pounds per square inch, but equipment will be designed to handle injection at a maximum pressure of 2200 pound per square inch, if needed.

Q What do you estimate your secondary recovery to be?

A It is estimated that total oil recovered from water flooding will equal the total amount of oil produced by primary recovery.

Q Will you now refer to Exhibit Six, and explain that, please?

A Exhibit Six consists of five separate radio activity logs, one each on five of the six proposed injection wells. Those wells logged are the Texaco-Etz Federal NCT1 Well Number One; the Texaco-Etz Federal NCT2 Well Number Four; the John H. Trigg Federal E Well Number 2-31; the A. C. Holder, et al, Decal Federal Well Number One, and the A. C. Holder, et al, Decal Federal Number Three.

Q You have no log for the Trigg Number Three?

A No, sir. A log was not run and therefore, not available on the John H. Trigg Federal E Number 3-31. On each of the logs in each - - Exhibit Five, a completion interval is marked in red.

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Q Do these exhibits truly and correctly - - Are these exhibits true and correct to the best of your knowledge and belief?

A Yes, sir, they are.

Q At this time we offer the exhibits.

MR. NUTTER: Texaco's Exhibits One through Six will be admitted in evidence.

MR. WHITE: That concludes our testimony on direct.

MR. NUTTER: Are there any questions of this witness?

MR. IRBY: Would you tell me the location of the water source well?

A Mr. Irby, I do not have the exact location of this water source well. Pardon me. I have some information that identifies the well by name, if I can locate it here. Just one minute, please. It is my understanding that the Caprock Water source well that would supply water to this project is known as their Watson Water Supply Well, in Section Two. Now, I don't have the township or range. I understand that this is located some distance west of the unit area, and I believe it is the same source that is currently supplying the Salsich waterflood to the west of the proposed unit.

MR. IRBY: Can you give me an approximate distance how far west of the unit area?

A It is being delivered to the Salsich properties, that would be approximately one mile west of this unit area. I assume that line will be extended to this proposed unit.

MR. IRBY: Well, can you get that and mail it to me?



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A Yes, sir, I certainly can.

MR. IRBY: And will?

A That will be the exact location of the water source well, or wells?

MR. IRBY: Yes.

A Yes, sir. We will mail that to you.

MR. IRBY: Thank you. That is all I have, Mr. Nutter.

MR. NUTTER: Mr. Williams, I notice in the unit agreement on Page Two, that the area is described as being Lots Two and Three in the East Half of the West Half and all of the East Half of the Section 31, being 553 acres, yet the plat and the application is for 480 acres, leaving out the Featherstone Eight, North Half of the Northeast. Is that in the unit or not?

A No, sir, it is not in the unit. The area shown in Exhibit A of the unit agreement and in Exhibit B of the unit agreement describes correctly the area within the unit boundary.

MR. NUTTER: Well, will the unit agreement then be amended here in Section Two, Paragraph A, where it is incorrectly described?

A I was not aware of this discrepancy here. I presume, Mr. Examiner, that if it is required to obtain approval of all parties, it would be amended.

MR. NUTTER: It would appear that that portion of it is incorrect, if Exhibits A & B are correct.

A Yes, sir. It would appear that there is a discrepancy



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here in the written portion in Section Two, and the Exhibits A & B. I am sure that the area shown in Exhibits A & B do properly describe the unit.

MR. NUTTER: Another thing I was wondering about, Mr. Williams, on Decal Wells, it appears that both of those injection wells have three zones of perforations, and the other wells have only one. Will you inject into all three of those zones on the Decal wells?

A Yes, sir. we intend to inject into all zones open in the well.

MR. NUTTER: How many wells, of the producing wells, produce from these extra two sets of perforations that the Decal wells have?

A I don't have the exact completion data on all of the producing wells. I believe that a number of the producing wells have those intervals open, but I am not certain as to exact number.

MR. NUTTER: Then, you estimate that your secondary recovery will be approximately equal to the primary?

A Yes, sir, we do.

MR. NUTTER: Total primary for the area is about 190,000 barrels?

A That is approximately correct, yes, sir.

MR. NUTTER: Are there any other questions? You may be excused. Do you have anything further in this case, Mr. White?

MR. WHITE: That concludes our testimony.



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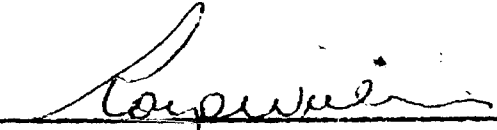
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MR. NUTTER: Does anyone have anything they wish to offer in Case 2939 or 2940? Take the cases under advisement.


STATE OF NEW MEXICO X
COUNTY OF BERNALILLO X

I, ROY D. WILKINS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal of Office, this 23rd day of December, 1963.


NOTARY PUBLIC

My Commission Expires:
September 6, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2939-2940 heard by me on 11/20, 1963.
 Examiner
New Mexico Oil Conservation Commission



PAGE -2-
Docket No. 34-63

CASE 2944: Application of Socony Mobil Oil Company for an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location for a proposed triple completion in the Vacuum-Devonian, Vacuum-Wolfcamp and North Vacuum-Abo Pools, Lea County, New Mexico, said well to be drilled at a point 600 feet East of the center of the NW/4 SW/4 of Section 36, Township 17 South, Range 34 East.

Oil Conservation Commission

ir/

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 20, 1963

9:00 A. M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or
Elvis A. Utz, Alternate Examiner:

- CASE 2939: Application of Texaco Inc. for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Square Lake 31 Unit Area comprising 480 acres, more or less, of Federal land in Section 31, Township 16 South, Range 30 East, Eddy County, New Mexico.
- CASE 2940: Application of Texaco Inc. for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Square Lake Pool, Eddy County, New Mexico, by the injection of water into the Premier Sand through six wells located in Section 31, Township 16 South, Range 30 East.
- CASE 2941: Application of Texaco Inc. for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the triple completion (tubingless) of its L. R. Kershaw Well No. 9, located in Unit B of Section 13, Township 20 South, Range 37 East, Lea County, New Mexico, to produce oil from the Skaggs Glorieta and East Weir Blinebry Pools and gas from the Weir Tubb Gas Pool through parallel strings of 2 7/8 inch casing cemented in a common well bore.
- CASE 2942: Application of Sunray DX Oil Company for the creation of a new oil pool and for special temporary pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Bough "C" Oil Pool for its New Mexico State "AO" Well No. 1, located in Unit M of Section 16, Township 10 South, Range 34 East, Lea County, New Mexico, and the establishment of temporary pool rules therefor, including a provision for 160-acre proration units and for fixed well locations.
- CASE 2943: Application of Gulf Oil Corporation to combine two existing gas pools, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of the Monument-Ellenburger and Monument-McKee Gas Pools, Lea County, New Mexico, into a single pool to be operated and prorated under the existing rules for the Monument-McKee Pool.